TESTIMONY
OF
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THE OFFICE OF AIR AND RADIATION
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE SUBCOMMITTEE ON ENERGY AND AIR QUALITY
COMMITTEE ON ENERGY AND COMMERCE
U.S. HOUSE OF REPRESENTATIVES
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Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify today. My name is Robert Meyers and I am the Principal Deputy Assistant Administrator for the Office of Air and Radiation at the United States Environmental Protection Agency ("EPA"). I am pleased to be here today to discuss the status of EPA's public health and safety standards for the proposed spent nuclear fuel and high-level radioactive waste repository at Yucca Mountain, Nevada.

I would like to begin by describing EPA's responsibilities for establishing standards for Yucca Mountain and why we have proposed revised standards. The Nuclear Waste Policy Act of 1982 initially prescribed the roles and responsibilities of federal agencies in the development of disposal facilities for spent nuclear fuel and high-level waste. EPA was identified as the agency responsible for establishing standards to protect the general environment for such facilities. In the Energy Policy Act of 1992, Congress delineated EPA's roles and responsibilities specific to the federal government's establishment of the potential repository at Yucca Mountain. EPA's role is to determine how the Yucca Mountain high-level waste facility must perform to protect public health and safety. Congress directed EPA to develop public health and safety standards that would be incorporated into the Nuclear Regulatory Commission's ("NRC") licensing requirements for the Yucca Mountain facility. The Department of Energy ("DOE") would apply for the license to construct and operate the facility and the facility would open only if NRC determines that DOE complied with NRC regulations which incorporate EPA's standards as well as other requirements. In establishing EPA's role, Congress also stated that EPA's safety standards are to be based upon and consistent with the findings and recommendations of the National Academy of Sciences.

EPA established its Yucca Mountain standards in June 2001. As required by the Energy Policy Act, these standards addressed releases of radioactive material during storage at the site and after final disposal. The storage standard set a dose limit of 15 millirem per year for the public outside the Yucca Mountain site. The disposal standards consisted of three components: an individual dose standard, a standard evaluating the impacts of human intrusion into the repository, and a ground-water protection standard. The individual-protection and human-intrusion standards set a limit of 15 millirem per year to a reasonably maximally exposed individual, who would be among the most highly exposed members of the public. The ground-water protection standard is consistent with EPA's drinking water standards, which the Agency applies in many situations as a pollution prevention measure. The disposal standards were to apply for a period of 10,000 years after the facility is closed. Dose assessments were to continue beyond 10,000 years and be placed in DOE's Environmental Impact Statement, but were not subject to a compliance standard. The 10,000 year period for compliance assessment was consistent with EPA's generally applicable standards developed under the Nuclear Waste Policy Act. It also reflected international guidance regarding the level of confidence that can be placed in numerical projections over very long periods of time.

Shortly after the EPA first established these standards in 2001, the nuclear industry, several environmental and public interest groups, and the State of Nevada challenged the standards in court. In July 2004, the Court of Appeals for the District of Columbia Circuit found in favor of the Agency on all counts except one: the 10,000 year regulatory timeframe. The court found that the timeframe of EPA’s standards was not consistent with the National Academy of Sciences’ recommendations. The National Academy of Sciences, in a report to EPA, had stated that the EPA’s standards should cover at least the time period when the highest releases of radiation are most likely to occur, within the limits imposed by the geologic stability of the Yucca Mountain site. It judged this period of geologic stability, for purposes of projecting releases from the repository, to be on the order of one million years. EPA’s 2001 standards required DOE to evaluate the performance of the site for this period, but did not establish a specific dose limit beyond the first 10,000 years.

EPA proposed a revised rule in August 2005 to address the appeals court decision. The proposed rule would limit radiation doses from Yucca Mountain for up to one million years after it closes. No other health and safety rule in the U.S. has ever attempted to regulate risk for such a long period of time. Within that regulatory timeframe, we proposed two dose standards that would apply based on the number of years from the time the facility is closed. For the first 10,000 years, the proposal retained the 2001 final rule's dose limit of 15 millirem per year. This is protection at the level of the most stringent radiation regulations in the U.S. today. From 10,000 to one million years, we proposed a dose limit of 350 millirem per year. The proposed long-term dose standard considered the variation across the country of estimated exposures from natural sources of radiation. Our goal in proposing this level was to ensure that total radiation exposures for people near Yucca Mountain would be no higher than natural levels people live with routinely in other parts of the country today. One million years, which represents 25,000 generations, is consistent with the time period cited by the National Academy of Sciences as providing a reasonable basis for projecting the performance of the disposal system. Our proposal would require the Department of Energy to show that Yucca Mountain can safely contain wastes, even considering the effects of earthquakes, volcanic activity, climate change, and container corrosion over one million years.

The public comment period for the proposed rule closed on November 21, 2005. We held public hearings in Las Vegas and Amargosa Valley, Nevada, and Washington, D.C. We have considered and continue to consider comments from the public hearings, as well as all of the comments submitted to the Agency's rulemaking docket, in preparing the draft final rule. More than 2,000 comments were submitted on the proposed rule. Commenters represented a variety of stakeholder perspectives, including industry, scientific bodies, state and local government, public interest groups, and private citizens. Comments primarily addressed one of three topics: first, the proposed post-10,000-year dose limit of 350 millirem per year, including the rationale for a higher long-term standard and the use of natural radiation levels to derive such a standard; second, the proposed use of the median value of the distribution of dose projections for comparison to the dose limit; and finally, the treatment of long-term events and processes, such as earthquakes and climate change. The comments on these and many other topics are directly related to the significant uncertainties in projecting the performance of the Yucca Mountain

disposal system for up to one million years, and the challenges of interpreting those projections in a regulatory proceeding. A document putting forth our responses to all comments will be published along with the final rule.

Since the draft final rule was submitted for Office of Management and Budget (OMB) review, we have engaged in productive discussions internally and with other federal agencies about the important and complex issues raised by setting a standard that will protect public health and safety and the environment for up to one million years after the Yucca Mountain repository closes. We look forward to concluding our analysis of the public comments and issuing the final rule.

Thank you again for the opportunity to appear before the Subcommittee and present this update on EPA's Yucca Mountain standards. This concludes my prepared statement. I would be happy to address any questions.